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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,524	11/05/2003	Koubun Sakagami	R2184.0272/P272	5931

24998　　　　7590　　　03/29/2007	EXAMINER
DICKSTEIN SHAPIRO LLP 1825 EYE STREET NW Washington, DC 20006-5403	GOMA, TAWFIK A

	ART UNIT	PAPER NUMBER
	2627	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	Applicant(s)
Office Action Summary	10/700,524	SAKAGAMI, KOUBUN
	Examiner	Art Unit	
	Tawfik Goma	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>10 January 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

This action is in response to the amendment filed on 1/10/2006.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Powelson (US

6940790).

Regarding claims 1 and 13, Powelson discloses an information recording/reproducing

apparatus, comprising: a binary/multi-level data converting unit converting binary data into

multi-level data (404, fig. 4a, and fig. 4b); a test data generating unit generating test data

forming part of the multi-level data (202, fig. 2 and col. 10 lines 21-25); a data recording unit

recording the multilevel data including the test data to an information recording medium (408,

fig. 4a, 4b and col. 10 lines 21-25); a signal reproducing unit outputting reproduction signals of

the multi-level data including the test data from the information recording medium (208, fig. 5);

a test data examining unit examining the reproduction signals of the multi-level data including

the test data to determine whether the test data is normal (820, fig. 8a and col. 22 lines 7-18); a

waveform equalization unit equalizing a waveform of the examined test data when the test data

examining unit determines that the test data is normal (col. 12 lines 61-67 thru col. 13 lines 1-

5); and a multi-level determining unit determining multi-level data by referring to a pattern

table generated using the examined test data (fig. 4b and col. 13 lines 7-17).

Regarding claim 2, Powelson further discloses wherein the test data examining unit

includes: a data distinguishing unit categorizing an input data frame into a test frame including

the test data and a data frame (col. 6 lines 50-57); a distribution computing unit computing a

frequency distribution of values for the reproduction signals of the test data (fig.7 and col. 16

lines 34-43); a feature amount detection unit detecting a feature amount of the computed

frequency distribution (col. 17 lines 11-20); a comparing unit deciding whether the test data is

normal by comparing the detected feature amount with a prescribed value (col. 21 lines 46-51);

and a memory unit storing the values of the reproduction signals of the test data (col. 16 lines

44-49).

Regarding claim 3, Powelson further discloses wherein when the data distinguishing unit

determines that the input data frame is the test frame, the waveform equalizing unit and the

multi-level determining unit stop operating, the distribution computing unit starts computing the

frequency distribution of the values for the reproduction signals of the test data, and the

memory unit stores the test data (fig 8b).

Regarding claim 4, Powelson further discloses wherein when the comparing unit decides

that the test data is normal, effective data in the memory unit is output to the waveform

equalization unit for determining a coefficient of a filter of the waveform equalization unit

according to automatic equalization algorithm, and the effective data is also output to the multi-

level data determining unit for generating the pattern

Table (col. 12 lines 42-67 thru col. 13 lines 1-17).

Regarding claim 5, Powelson further discloses wherein the multi-level data determining

unit includes: a pattern table generating unit generating the pattern table; and a multi-level data

detecting unit detecting the multi-level data by searching through the pattern table for a pattern

which is similar to effective data in the memory unit (fig. 4b and col. 6 lines 58-67 thru col. 7

lines 1-4).

Regarding claim 6, Powelson further discloses wherein when the test data examining unit

determines that the test data is normal, the multi-level data detecting unit outputs the effective

data in the memory unit as multi-level data (figs. 8a-b).

Regarding claim 7, Powelson further discloses wherein when the comparing unit decides

that the test data is abnormal, the test data from the information recording medium is examined

again and input to the distribution computing unit (820-822, fig. 8a)

Regarding claim 8, Powelson further discloses wherein the test data is not used when the

test data is again decided to be abnormal (822, fig. 8a).

Regarding claim 9, Powelson further discloses wherein one or more test data from the

information recording medium is examined, wherein when the feature amount of the test data

surpasses a prescribed range, the value of the reproduction signals of the test data surpassing the

prescribed range is excluded (824, fig. 8a), wherein an average of the values of the reproduction

signals of the test data except for the excluded test data is obtained for detecting the multi-level

data (col. 22 lines 37-40).

Regarding claim 10, Powelson further discloses wherein the test data is allocated before

and after the multi-level data (col. 10 lines 21-32).

Regarding claims 11 and 14, Powelson further discloses wherein the test data includes combinations of data comprising same numeric series (col. 8 lines 30-34).

Regarding claims 12 and 15, Powelson further discloses wherein the test data includes combinations of data comprising different numeric series (col. 8 lines 42-46).

Response to Arguments

Applicant's arguments filed 1/10/2006 have been fully considered but they are not persuasive. Regarding applicant's argument that Powelson does not disclose examining whether the recorded test data is normal, this argument is not persuasive because Powelson's determination in step 820 of figure 8 reads on claimed "examining the reproduction signals of the multi-level data including the test data to determine whether the test data is normal." Powelson examines the test data to determine if the error has converged below a threshold (i.e. the error is normal) and then proceeds to the step 826 if the data is normal (error below threshold). The applicant's assertion that that the data proceeds to step 822 regardless of the data being "normal" is presumably based on the fact that an error is not generated by Powelson at the examination of the error being below the threshold. This argument is not persuasive because applicant places no limitations on what "normal" data is in the claim, and does not require the generation of an error if the data is abnormal. Applicant's disclosure even describes that normal data is data that is within a predetermined range (see pars. 24-25). Even if Powelson's "normal" data proceeded to step 822, as asserted by applicant, it would still read on the claim because the process generates an error signal when the maximum number of iterations have occurred (data is abnormal), otherwise when the data is "normal" the process moves to step 826.

Applicant's argument with respect to claim 7 are not persuasive because, applicant does not claim that the test data that is examined again is the same signal that is already reproduced from the recording medium. Powelson discloses recording the same test data pattern using the new write strategy, therefore Powelson discloses examining the same test data again to determine if the data is normal.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tawfik Goma whose telephone number is (571) 272-4206. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
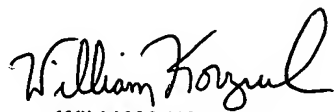
Information regarding the status of an application may be obtained from the Patent

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like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

T. Goma

3/26/2007

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